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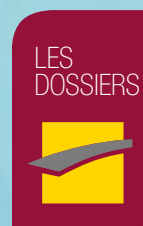
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Interactions in French on <http://interactions.utc.fr>

Donnons un sens à l'innovation

# Interactions



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Industrial Transition  
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## A 'Best Paper' Prize at the EvoStar-EvoApplications Conference



Fabio D'Andreagiovanni, a CNRS junior research officer working at the UTC-Heudiasyc Lab was awarded

the Best Paper Prize at the European EvoStar-EvoApplications Conference, a major event in the field of bio-inspired computer sciences. The paper - jointly written by Fabio D'Andreagiovanni and Antonella Nardin - proposes an optimization and rapid metaheuristic model, designed for use in the DVB-T2 networks. These are networks currently under development for the dissemination of digital TV programmes and are being adopted in many counties now. However, the transition requires that the network operators reconfigure existing networks to be better adapted to an implementation of this new standard. ■

## Signature of a partnership between UTC and IFSTTAR

UTC and IFSTARR (an institute for transportation sciences and technologies, and network planning) have pooled their skills in the form of a cooperation agreement covering the next five years. The contract is renewable and relates to joint research that UTC and IFSTARR could undertake (joint publications, PhD thesis co-supervision...), the themes being cities, urban areas and transportation, but its scope can be widened to allow exchanges of research personnel, students or to join forces in giving lectures and training and managing student projects in partnerships. Four major themes for collaboration have been identified: digital mock-ups and 3D geometric reconstruction, electric power distribution micro-networks and optimal energy management, hydrological risks and the impact of climate change on the water cycle, 'smart' mobility and territorial dynamics. ■

## A prize for UTC's "creative, dynamic atmosphere"



UTC was awarded an Engineering School Prize for its "Creative, dynamic atmosphere" an award made by an advisory agency Universum who each year carry out "enterprise notoriety" surveys with students and graduates for the French "grandes écoles".

This is the first time that Universum has decided to reward schools highly ranked by the students on various precise themes. ■



## RESEARCH

# A 'birdie' for UTC: a SATT Trophy (for innovation) and an ERC Grant

## Helping cases for liver transplants

The 'NormoPerf' project - supervised at UTC by Prof. Cécile Legallais, Director of the UTC-BMBI Lab (Biomechanics and Bio-Engineering – offers up new therapeutic perspectives for patients suffering from liver diseases and awaiting an organ transplant operation. 'NormoPerf' also represents a successful partnership between medical practitioners and research scientists, plus numerous economics opportunities. It was awarded a Trophy for Innovation from SATT Lutec.



**In 2013, the demand for liver transplants was more than double the number of donors available. Consequently, the very long delays have led to an excess mortality of some 10% of the patients on the waiting list.** Moreover, the limited quality of certain grafts also leads to transplant rejections and hence to further deaths. A major challenge when seeking to improve survival rates for patients lies in extending the offer of organs that can potentially be transplanted. The 'NormoPerf' project aims at developing a system to allow for preservation, under best possible conditions, of temperature and oxygenation of the organs collected, their pre-op preparation, and possible clinical assessment before transplantation. The project has its origins in needs expressed by the practitioners. "Contacts were established with Professor Olivier Scatton, the senior surgeon in charge of liver transplantation at the large Paris hospital complex known as 'Pitié-Salpêtrière'. "The surgeon wanted to develop a less expensive technique than existed at the time in the marketplace", explains CNRS research scientist Prof Legallais, who already had expertise in liver substitution technologies and techniques. The 'university institute for health engineering' (UIHS)

- created recently by the Sorbonne Universities cluster - financially supported the project from the start providing for a grant of 10 000 € in 2016.

### Teamwork

Over a period of a year and a half, a total 15 UTC student engineers – registered in mechanical and bio-engineering, and computer sciences – were involved in teamwork to define a very precise specification, designing and assembling a prototype and carrying out the first tests under the dual supervision of C. Legallais and P. Paullier, a CNRS research engineer. The specific characteristics of NormoPerf rely on well-tested technologies – a sensor controlled pump that requires knowledge of physiology and makes the project necessarily pluridisciplinary. The most challenging difficulty consisted of reproducing that natural perfusion fusion of the liver where large volumes of blood flow at low pressure. "The students first questioned the surgeons about organ vessel dimensions, based on which the mechanical engineering students designed and assembled a model liver using rapid prototyping protocols", recalls Cécile Legallais. The computer scientist students - with assistance from Jérémy Terrien, UTC's Electronics Department – designed the drive sensors. Various successive design versions were presented to the medical practitioners, leading to the currently adopted prototype. The reduced number of components involved led to production costs approximately 3 times less than commercially available but 'more complex' models. Various transplantation units in the Paris Region have already shown their interest in the device. Given the market potential, the SATT Lutec registered a patent claim in a partnership signed with the UTC Research Directorate. The SATT also made available a 400 000 euro 'co-maturing' fund to bring the project up to a pre-industrial phase. Moreover, the SATT teams are exploring possible commercial negotiations with the companies who have expressed interest. ■



## RESEARCH

# A 'first' ERC Grant for UTC

Anne-Virginie Salsac, a CNRS research scientist who is still working at the UTC BMBI (biomechanics and bio-engineering) Lab, was awarded a "Consolidator Grant" by the European Research Council (ERC), this being a grant that goes to "young research scientists", between 2 to 12 years after gaining their PhD. This ERC Grant is a "first" for UTC.

**The ERC grant is a financial aid, maximum amount 2 Meuros over a 5 year period, awarded to Prof Cécile Legallais for her project appertaining to the behaviour of deformable liquid core microcapsules introduced in living organisms.**

The Consolidator Grant represents a strong recognition for this expert in human body fluid biomechanics whose career path has already been marked by numerous awards (among which the CNRS 2015 Bronze Medal). Her research in vascular flow phenomena over more than 15 years have led to her now having a world-class reputation in this field. Her current research activities at UTC aims at improving medical drug delivery vectors to increase efficiency and decrease unwanted side-effects. The objective is to gain a better control as to the site where the therapeutic molecules are to be released and to dose more accurately the quantities of drugs delivered

to that precise spot. "In order to achieve this, we must be able to control the "mechanical factors (viz. deformations) of the microcapsule vectors to deliver the drugs to exactly where we want", she explains. The approach adopted consists of using both digital and experimental models to simulate fluid circulation and microcapsule deformation in our digestive tract and our blood vessels. The coming investigations will concern devices delivering betaine, in particular, this molecule being a synthesized anti-oxidizer obtained from sugar beets. ■

The UTC-BMBI web-site at <https://bmbi.utc.fr>

A video-interview "Un ERC Consolidator Grant pour Anne-Virginie Salsac" at [webtv.utc.fr](http://webtv.utc.fr)

A video interview Cecile Legallais, "Le foie bio-artificial" [the artificial liver] at : <http://hypervideo.utc.fr>



## INTERNATIONAL



# A cooperative agreement to study next generation micro-systems

The LIMMS (Laboratory of integrated micro mechatronic systems), the first CNRS affiliated Franco-Japanese laboratory, housed by the Institute of Industrial Science (IIS) at the University of Tokyo, is a 'bookmark' in the fields of micro- and nano-systems applied to biomedical, energy and optical domains. An international conference organized in April 2018 at UTC provided the opportunity for both parties to get to know each other better and to envisage signing new partnerships.

**April 12-13, 2018, a mixed delegation of 14 Japanese and French research scientists addressed a floor of some 100 participants, presenting several LIMM research thematics.**

The main UTC labs returned the compliment, presenting their own research programmes. The French Director of LIMM, Eric Leclerc took part in this visit-cum-conference. He knows UTC well, given that up to 2015 he was employed by the CNRS UTC mixed lab – BMBI (biomechanics and bio-engineering). He was appointed Director of the LIMM in 2016; in fact, he has been working with the University of Tokyo since his post-doc work on artificial micro-organs in 2000. A specialist of bio-processors (aka 'labs on chips') – which are glass or silicon wafers carrying microcircuits somewhat similar to those found in micro-electronics, used to grow cells and/or tissues. He sees Japan as a major scientific and technological actor in his field: "Japan has pioneered work on stem cells and implantations have already been made in human cornea and hearts and within two years, tests will be conducted for the pancreas". LIMMS has played no small part as and when it developed micro technologies that prove both vital for the

implementation of such medical progress and technical successes per se. LIMMS has notably designed highly accurate components such as the sensors and tools needed for micro-manipulation. Using such tools helps provide optimal conditions for cell and tissue cultures.

## Numerous possible synergies

The BMBI laboratory's expertise and long-standing relationships have convinced its research scientists to collaborate with the Franco-Japanese laboratory in the area of bio-hybrid micro-organs. A thesis funded by UTC has stated recently between the two, laboratories. A mention must also be made for the university hospital project called ILIT (Innovations in Liver Tissue Engineering), financially supported by the French government incentive programme 'Investments for the Future' (8.5 Meuros) under the supervision of the 'hepato-biliary centre' of the Paul Brousse Hospital, at Villejuif just South of Paris. The theme of this programme is the so-called liver lab-on-chip and the LIMMS and UTC-BMBI are collaborating with other Paris regional partners too. Japanese and French scientists and PhD students will work together to design

micro-livers to pursue investigations in toxicology which are of special interest to the pharmaceutical industrial sector and the bio-medical sector in general. These are highly strategic domains but not the only ones the partners are exploring. The skills of the Japanese scientists in electronic components can prove very advantageous for many other applications. The April conference enabled numerous contacts to be made, with the prospect of taking on more diversified projects in the future. For example, the research scientists from the UTC Heudiasyc Lab discussed possibilities with colleagues from the Advanced Mobility Centre (a specific group of laboratories of the IIS institute at the University of Tokyo) who are also working on the theme of autonomous vehicles. The UTC-Roberval Lab (mechanical engineering) was especially interested in the Japanese micro-sensors which open up new prospects for mechatronic control systems. The links between the two institutions (UTC and LIMMS) will be strengthened and implemented further. A return visit by UTC representatives to Japan is 'on the books' for some time later this year. ■

Cf. video on the LIMMS : [webtv.utc.fr](http://webtv.utc.fr) > Valorisation et stratégie d'innovation

## Two UTC professors honoured in Indonesia



Two outstanding professors in the field of computational mechanics, emeritus professor Jean-Louis Batoz, UTC-Roberval Lab and Prof. Adnan Ibrahimbegovic current holder of the Chair of Mechanical Engineering were received with full honours for two weeks at the Universitas Indonesia, under the aegis of the World Class Professors (WCP), an organization that allows world class professors to be invited for the purpose of launching new research work and publishing the results in peer review international publications. This particular collaboration led to publication of two papers in the international reviews Composite Structures and Computers and Structures. ■

## Two UTC masters' degrees in the "top 5" of the Eduniversal 2018 ranking

Two UTC master's degree specialties have been ranked in the Eduniversal 2018 for the best Masters, MS and MBAs, viz.:

- 3rd place for the Master's degree specialty "Design engineering: performance management and quality in organizations (category "QA" – quality assessment)
- 5th place for the specialty humanities and creative industries: a curriculum user, in the category "User Experience, UX Design" ■

[www.utc.fr/formations/diplome-de-master.html](http://www.utc.fr/formations/diplome-de-master.html)

## UTC has been certified as 'qualified for enterprise' (CPE)

UTC and its PhD section (ED71) have been certified as "Qualified for Enterprise" by the collegiate body CDEFI (all the directors of the French engineering schools). The CPE label certifies that an establishment offers a curriculum that favours the professional recruitment of PhDs by the entrepreneurial sector, inasmuch as they acquire a number of specific skills which takes the form of a national success certificate. ■

[www.utc.fr/presse.html](http://www.utc.fr/presse.html)  
for the press release; download as of  
30/03/18



## PEDAGOGY

# UTC establishes an institute for advanced studies in digital transition

The ambitious aim assigned to this new structure, as of December 2018, is to set up an "excellent" continuing education training course and establish a Chair of Contemporary & Digital Art alongside high level research on the challenges in digital transformation processes.

**The major challenge facing this IHETN (institute for advanced studies in digital transition) is to determine how it can contribute to the ongoing digital transformations in Europe.**

The challenge is strategic. Firstly, because digital transformation is affecting and indeed revolutionizing Society as a whole: enterprise, administrations, associations, education, defence, the arts and all sorts of forms of governance ... secondly, because of the sheer domination of digital giants (for the most part, American or Chinese): the so-called GAFAMI (Google, Apple, Facebook, Amazon, Microsoft, IBM), Natu (Netflix, Airbnb, Tesla, Uber) not forgetting China's BATX (Baidu, Alibaba, Tencent, Xiaomi). We can rightly wonder where such powers come from. The fact is that the Old Continent is sadly behind in terms of its digital culture. "Today, we are living in a world pervaded by multinational companies who are busy imagining models for our future activities that are totally incomprehensible in Europe", notes Prof. Yann Moulier-Boutang, chair of Economics at UTC and among the pioneers who initiated this institutional project. "These companies have clearly foreseen the advantages that lie in offering Internet surfers free services which revolve round 'pollination' platforms that collect our personal data. By doing this, they can then sell their clients information as to interactions in and over the nets. Europeans, if they wish to preserve their position and rank in a global economy where all nations participate, must build their own digital culture (which cannot be reduced to simply mastering computer sciences and electronics). We must perforce understand all the implications of a digital transition, whether they be economic, industrial, legal, societal, citizen-oriented, or safety/security ... we have here a crucial need for our enterprises, our territories and our Society that the future IHETN institute will address.

## Immersion in digitised cultures

IHETN will prepare and organize 5 thematic seminars about the strategic challenges that underpin digital transition: digital aspects of legal innovation; Industrie 4.0 and future work; digital culture and imagination; 'civic tech' and novel citizenships; cybersecurity. Comparisons with the results of high level research activities will provide matter for "excellent" training modules, enabling managers and promising executive candidates in enterprise, administration and associations to immerse themselves in the digital universe; new imaginative economic models that drive innovation in the Silicon Valley, to analyse the impact of a digital world on work, on the way enterprises are organized and likewise public policy is framed and implemented (see box). The course (approx. 250h) with a university diploma, will be opening end-2018. The institute will also offer a 'first degree' level course. This will address not only excellent students (near

graduates) and bursaries will be made available to follow the above management course. The Institute will also participate in the creation of a Chair for Contemporary & Digital art that will house artists on campus. The objective here is to help UTC student engineers to develop their personal creativity and to train them to better understand the relationships between contemporary art, the digital world and innovation.

To fulfil its 3 missions, UTC can rely on cutting edge skills, notably at its UTC-Costech Lab (knowledge, organization and technology intensive systems) and UTC-Heudiasyc (heuristics and diagnosis of complex systems). But there will also be support from front line partners, such as the CNEAI (national centre for art & image edition), who will co-create the Chair. Research and training in the field of cyber security will be co-organised with the IHEDN (institute for advanced studies in national defence) a public establishment that reports to the French Prime Minister. Moreover, the workshop on legal innovation and the digital world which began in June 2018, involves the universities of Aix-(Marseille, Poitiers and Toulouse 1 Capitole, as well as a law office, Bamboo & Bees, specialized in innovation and will lead to cooperation with the universities of Nouvain-la-Neuve (Belgium) and the laboratory for Cyber-justice at the universities of Montréal and McGill (Canada). Prof. Yann Moulier-Boutang will chair the Institute's scientific advisory committee. UTC, with this ambitious project, will position itself at the forefront of research and training in regard to the digital transition in Europe. Several companies have already confirmed that they will register managers for the IHETN course (the banks Crédit Agricole, BNP Paribas and Consort NT, ...). ■

## Five continuing education training modules

- **Digitization and transformation of the economy and value:** cognition capitalism, new economic models...
  - **Digitization, production, organization and framing of public policy :** consequences of digitization on work, industries and 4.0 service sectors; uberization, robotics, transformation of public policies...
  - **Digitization and social innovation, digital cultures :** open digital protocols (makers, hackers, Fab'Labs...), imaginary phenomena in a digitized world, notably the key role played by 'sci-fi' in entrepreneurial culture in the Silicon Valley...
  - **Sciences and technologies in a digital world :** artificial intelligence (AI), algorithmics, alternative prediction models used in AI, internet web mapping...
  - **Digital intelligence and security measures in/for organizations :** a status report of today's and tomorrow's threats (cyberattacks, cyber hacking...), the European General Data Protection Regulation on (GDPP), cyphering, cloud...
- Contact : François Velu, Director, Continuing Education UTC / [francois.velu@utc.fr](mailto:francois.velu@utc.fr)





# The student associations:

## a treasure for UTC and its surrounding territory

UTC fosters and encourages the associative life of its students. Not only does it contribute strongly to the students' personal and professional life styles, but it is also an important territorial asset for the university, notably building up a reservoir of talent and creativity that can lead to new innovations and boost economic activities.

**“Life continues after the class-time !” – this slogan on a wall of the students' association**

**Bureau (BDE) says it all. Indeed, « asso », life is live, kicking and even flourishing at UTC.** with no less than a hundred associations and close on a thousand 'matriculations', i.e., a quarter of the total UTC student population. Sports, music, theatre, dancing, aficionados of space engineering, biomechanics, or biomimeticism, a junior enterprise, a Fab'Lab, a 'social aid' grocery outlet for needy students, organisations actively engaged in ecological transition ... and a few 'heavy-weight' participants, such as the

Imaginarium Festival, which organises two days almost non-stop concerts each Pentecost weekend, and this event now regularly draws 13 000 festival-goers. So how are we to explain such a vitality? No doubt, the answer lies in the talents and energy deployed by the UTC students. “Compiègne is not Paris” underlines Paul Sainte-Cluque, President of the UTC-BDE Bureau. “Compiègne is a small city where the UTC students represent 10% of the total urban population. If we want to see extra-academic events, nobody is going to organize them for us. So it is up to us to do it!” This is an asset for Compiègne.

By organizing open events such as the Imaginarium Festival or Festupic, the Picardie festival of university theatre, providing school class work aid for pupils living in unfavourable milieus,...





or carrying out local “citizen” worksites during the day-event “All together for the City”, which takes place each September. Student associations visibly contribute to the cultural and social development of Compiègne and its surrounds. “Our aim is even to open up more of our activities to the local population because we are proud of what we can do and it helps improve our ‘image’”, notes Paul Sainte-Cluque. “We would like to demonstrate that although UTC students can at times be noisy, they do represent a real of richness for Compiègne”.

### A valued experience

And if the dynamics of the UTC associations is where it stands today, it is also because the university believes in their pedagogical virtues and indeed encourages them a lot. “As is the case for every university, part of the academic fees goes to a fund to assure solidarity and development of student initiatives, notably for the financing of associative activities and projects”, explains Véronique Hédou, a lecturer-cum-research scientist in charge of “life on campus”. “We should also bear in mind that UTC provides grants to the associations amounting to over 40 000 €/yr. And this support is not only financial. My role is to accompany the associations and to set up connections between them and the appropriate university services, to give advice on projects, notably in terms of safety measures needed when it comes to organizing large-scale events. One final point: students are required to justify at least one extra-curricular activity to obtain their UTC engineering diploma”. Consequently, at some point in their UTC curriculum, a majority of students get

involved in an association. “UTC adopted this provision in 2006”, confirms Étienne Arnoult, UTC Director for Training and Pedagogy. “Today we are also thinking about valorising even more the investment students make in joining these associations, for example by making their participation a ‘supplement’ to the diploma per se. This would be coherent with our overall training policy”.

For more than 20 years now, UTC has been advocating project-oriented pedagogy in order to have the students become actors of their learning process and to see them face up to the realities of the engineering profession. The students are invited to work in small groups, often interdisciplinary in nature, on a series of subjects normally submitted by the university’s entrepreneurial partners. This encourages the students to take an active role in the associations. It turns out to be complementary in gaining know-how and ‘presence’ which are important factors contributing to their academic success and to their future insertion in the professional world. In a similar manner to project-intensive pedagogy, it allows the students to consolidate certain skills acquired in the class-room. Students can find themselves trying out project management methods they have learned ‘in the books’ when

“They thereby can step back a bit from their class-based knowledge, put this together and acquire a systemic vision of the projects they accept – and this, believe me, constitutes a positive factor in our studies as a whole”

*Etienne Arnoult  
Director for Training and  
Pedagogy*

they get involved in UTC’s association life. If the latter have a technical content, they can also implement their scientific and technological knowledge, while at the same time coming to grips with the reality of cooperative works with comrades from other specialties and at different levels.

“This for, example, is the case for the UTCoupe volunteers who design and assemble robots for the French Robot Cup, or those in the Team UTécia who assemble ultra-low fuel consumption cars to take part in competitions like the Shell-Eco-Marathon”, observes Étienne Arnoult.

“Students here combine skills in project and team management, plus some economics and lots of engineering. They thereby can step back a bit from their class-based knowledge, put this together and acquire a systemic vision of the projects they accept – and this,

### The volunteers speak out

Before his election to the position of President of the UTC BDE, Paul Sainte-Cluque already had a rich association track-record that proved highly positive when he was looking for his first 6 month internship with an industrial company.

“As of my second semester at UTC, I became a member of the UTC association responsible for the integration of new students in September. I later became President of this association – one of the largest at UTC – then President of the association that organizes the Finals Soirée which signals the end of the academic year at UTC. These associative activities, I think, were the deciding factor when compared with other applicants for an internship at the SNCF: my CV was selected consequently and indeed my interviews focused largely on these activities. My internship took place mainly in a maintenance unit and my role was to be the go-between for SNCF personnel and external correspondents. Effectively, the skills I acquired in project and team management via my association activities proved very useful for my internship”.



L'ORÉAL

### A salient point on a CV

**Léa Rieutord is a Talent Acquisition Specialist officer for the L'Oréal Group, recruiting trainees and freshly graduated engineers**

“At L'Oréal, we pay considerable attention to the association background of applicants. It is a factor that provides clues to their personal profile, especially when we are recruiting trainees who have no professional experience as yet. Moreover, when candidate do not mention any association activities at all in their CVs, this comes as a surprise to me. We students become involved in an association, this denotes degree of curiosity with respect to the outside world and allows them to develop certain non-academic skills: notably the aptitude to address project and team management questions, or to develop a critically analytic mind (for example, when a student accepts to be responsible for an “asso” budget). Getting involved in defence of a cause is also a fundamental criterion for L'Oréal: inspiring the entrepreneur spirit of staff, their capacity to go beyond what exists today and to innovate. When students have been President or Vic-President, this demonstrates potential for leadership. Nonetheless, one need not absolutely need to mention an associative activity on the CV. A person really must be involved in a project and be able to explain this clearly. Mentioning, for example, that a person was a member of an “asso” Bureau, with N members and an annual budget of x€ for example, shows that then person is ready to accept responsibilities. It can be a salient point on a CV”.





believe me, constitutes a positive factor in our studies as a whole”.

## A creative engineering school

When students engage and invest like this in a UTC association, alone and responsible for their projects and budget, i.e., with no lecturers around to assist, the students also develop other, additional aptitudes that are somewhat difficult to transmit through the classic training they get. One is autonomy – they learn how to organize themselves and to manage allotted times. Another is self-confidence – when negotiating with bankers or seeking sponsors to finance their projects, for example, they definitely gain in self-assurance. Likewise, in creativity – in the UTC associative world, naturally within the bounds dictated by law and certain rules, notably those in regard to safety, they are totally free to indulge their imagination. Indeed the originality of their initiatives demonstrates that there is no lack of imagination! “In other words, our associate contribute to a factor greatly appreciated by the corporate world, beyond classic professional skills, viz., the self-assurance and a somewhat intrepid outlook on life”, sums up Étienne Arnoult.

UTC now wishes to valorise this reservoir of student talents and creativity in its associations. As Pascal Alberti, UTC Director for Innovation and Territorial Development, puts it “The University intends to contribute more to innovation and to the creation of new economic activities. To achieve this, we need to act closer to the SMEs of which there is a shortfall among our entrepreneurial partners. We can accompany the companies in their innovative processes, based on the skills of our lecturer-cum-research scientists but also relying on the UTC undergraduates, whether it be in getting them involved in corporate projects and the framework of their classwork, or in involving their relevant associations”. One of them is already constantly in contact with industrialists, viz., USEC, UTC’s Junior Enterprise. But other associations could sign partnership agreements with these SMEs. For the students, it would be way for members to show and offer their skills. Moreover, the Innovation

and Territorial Development Directorate is seeking to get UTC associations more involved in its policy thrust towards the local enterprises. Another advantage: occasionally we see “nuggets” emerging from the associations, from which start-ups can be launched. UTCiel, for instance, is rebuilding two mythical aircraft from the 1930s, which will be as close as possible in performance to the originals whilst complying fully with today’s safety and airworthiness standards to be allowed to fly. Projects such as this one can lead to innovations. “But to get there, we must accompany the students”, underlines Pascal Alberti. “Firstly because there is a natural turnover of the students – they are with us for a year or 6 months, then go off to do a placement somewhere outside France. Consequently, an excellent idea can fade away

and die because of a lack of continuous support. Secondly, we must help the students identify promising routes ahead for their projects and to help them transform them into viable economic activities. For example, those involved in the Imaginarium Festival develop a product and hand it over to the Festival-goers and organizers. We propose to finance a new study of the product to see if they can come up with an innovation opening the way to wider economic outlets.

In contradistinction, a lecturer who has an innovative idea may wish to rely on an association to develop his/her idea. The objective is to foster a collaborative dynamic approach integrating all the forces that exist at UTC to improve overall innovation targets. The university’s associations can play an important role here”.

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*Pascal Alberti, UTC Director for Innovation and Territorial Development*



## Becoming rapidly operational in an entrepreneurial environment

**Francis Gauvain graduated from UTC in 1980. Today he is Director of Sustainable Development for the Safran Group and who spent part of his career in manpower management when, notably, he was Director of HR for one of the group subsidiaries: Safran Nacelles.**

“When I was at UTC, there were a few associations, viz., not very numerous. I have observed that association activities have grown considerably and have become an integral ingredient in the students’ curriculum. This is excellent news. Getting engaged in an association is not absolutely necessary to be offered a job, but it certainly does help and can spell the difference between two CVs. I clearly see three advantages here! The first is that it enables personal development, revealing one’s personality, gaining in self-confidence, getting to know one’s strong and weak features... If the mission of a university is first and foremost to transmit knowledge, it must also deliver the keys for personal development. The second interest lies in the open minded approach the students acquire, their capacity to invest in very concrete topics – in an association we have a taste of real life, with real projects where team leadership is involved. In short, it gives the students a professional experience before recruitment: a way to learn to manage a project, handle a budget, to learn to speak in public, to negotiate, to make decisions, to assume responsibilities... All these qualities allow the UTC graduates to become more rapidly operational in an entrepreneurial environment. Recruitment officers will no doubt ascribe a higher degree of importance to the associate investment of young graduates”.







# The UTC 'BDE' Bureau organised just like an SME

The UTC students Bureau, known by all, affectionately, as the « BDE » is one of the mainsprings underpinning associative vitality at UTC, and its members assure the perfectly organized equivalent of support functions of an enterprise. Interactions offers a zoom and throws light on the UTC-BDE and its 4 poles.

**I**n most French universities and engineering schools, the « BDEs » traditionally orchestrate and organise the “special Soirées” and other festivities that are milestones in any student’s curriculum”, notes Guillaume Ouattara, VP-Comm at the UTC-BDE. But at UTC, Compiègne, our BDE does not in fact organize any event, so to speak. Its role is to federate the activities of all the associations with a primarily administrative function. The BDE facilitates to overall actions, sharing functions with the 4 poles in which the associations are grouped together, according to the category of activities: 1° Artistic activities and events; 2° Solidarity and citizenship; 3° Technology and entrepreneurship; 4° Campus life (on the UTC campus).

The BDE, for example, acts as House Manager for the ‘students associative HQ’ and for the insurance policies that cover most of the activities. But above all, the BDE is the ‘banker’: it collects the annual subscriptions of some 3

500 undergraduates and receives its annual grant from the University which it then subdivides the money among the associations. The concept of the association poles helps each “asso” to prepare its request for a grant. “We critically assess and amend their grant applications, making sure - as best we can - that their budget forecast is (and remains) on track”, explains Oscar Roisin, President of the Technology and Entrepreneurship Pole. “This is important, vis-a-vis the BDE and even more important when they apply for funding from a bank, or a sponsor”. Moreover, just like the BDE itself, each Pole has its own 1901 French association Law structure and thus can offer to ‘house’ a new associative project. “One just needs to set up a club inside a Pole which then allows you to open a bank account and receive funding from the BDE, without being bound by the obligations of the 1901 law provisions”, underlines Oscar Roisin. “Every quarter, we accompany two to three creations of associations and this enables them to rapidly set up and launch a project”, notes Guillaume Ouattara.

## Continuous improvement

“In this light, the BDE and its Poles also organize a real capitalisation of knowledge, with what they call the ‘asso-wiki’, an on-line platform that centralizes the data any ‘asso’ might need” notes Véronique Hédou, a UTC staff member, in charge of student campus life. “How does one create or revitalize an association, obtain grants, handle budgets and cash-flow...?” In like manner, every time the Bureau of an association comes up for renewal, they monitor the process to ensure things go smoothly and that the incoming team has access to all the information it needs to follow a pattern of continuous improvement.

Among the activity priorities to come – development of partnerships with enterprises. For the BDE, the purpose here is notably to ensure the safety of student-organized events. “This is an increasingly sensitive topic” », explains Paul Saint-Cluque, President of the BDE. “To date, the associations have chosen among their own external service offers. Our aim is to have a single partner to better implement these safety measures and to be sure that the agents ‘on site’ carry a professional ID card. Since we often have to approach safety service companies, it is also a way to negotiate more attractive prices”. As far as the Technology and Entrepreneurship Pole is concerned, bringing together innovation-intensive associations, the aim is to create privileged links with companies that could help the asso member to improve of their own skills and to support them financially to help members take their projects even further. ■

## The volunteers speak out

**Oscar Roisin, President of the Pole ‘Technology and Entrepreneurship’ devotes at least 10h/week to his associations. But he in fact finds the task less arduous that we might imagine...**

“I like the job, all the more that it provides an experience I could not get in the classroom. For example, in team and project management, given that my role is to coordinate the work of the members of the various “asso” Bureaus to ensure that our activities are being promoted appropriately. We also assume a legal role – it is my responsibility to overview and vet the statutory regulations for each “asso”, its bye-laws and the agreement between a given Pole, the BDE and the university (or with external partners). This I find is an interesting function, all the more so that I personally hesitated between doing law or an engineering school. And because the “assos” in my Pole address a very wide range of subjects (robotics, bio-mechanics, space technologies...), it teaches me to dialogue with other students from very different backgrounds”.





# No sooner have they matriculated at UTC, than students dive head-first into the Association tub

The Campus Life Pole of UTC is a federation of the largest number of “assos”, i.e., around 40. It runs the Students’ Foyer, a campus magazine, a radio-station, sports clubs, the cinema, the fine-wine-drinkers club, the ‘bikers’ ... with no less than 3 special structures in charge of welcoming, inducting and integrating UTC incomers.

## The volunteers speak out

**Maxence Dumaine was elected President for the UTC Incomers’ Feb.2018 Induction Integration and is most pleased with the results.**

“When I came up to UTC, I was a bit lost and worried. The two weeks given to our integration were pure magic and reassured me a lot. The “cause” upheld by this asso I saw as important. Managing a team is no easy matter and we have just one semester to build a full two-week programme with animations for 1 200 newcomers: the task is enormous. But it is very exciting. I have learned to manage a project from A to Z while complying with the overall ‘welcome to UTC’ policy. If we want to guarantee a ‘respectful’ and successful ‘undergrad’ integration our activities must not be perceived as a nuisance by the Compiègne locals, so we must be rigorous and serious at every stage.”

**Émilie Jacquemin, was a member of two ESN Espéranto teams, then team manager and finally became President of this association in autumn of 2017.**

“When you direct and manage ‘asso’ projects, the real challenge lies in motivating everyone (viz., the volunteers) to ensure the organization goes smoothly. This is not easy to obtain all the time because, essentially, we are talking about volunteer work and must remain a pleasure to do it. I have to be nice, i.e., persuasive and not authoritarian ... in the UTC associations we do a lot team-building with activities where we learn not only to appreciate other members but to work together. This is paramount for globally satisfactory team-work.”

incomers and managing the events proposed on the UTC Integration programme.

“At UTC, our student engineers come from all over France and abroad”, explains Maxime Dumaine, President of the Integration Asso. “When they first arrive, they do not know anybody; so we must help them build up a first circle of friends but there is no (NDLR -previously traditional, now illegal) rough-and-tumble type hazing: our integration is “clean”. Among other events, there is an orientation race round Compiègne, a sort of “Fort Boyard” [TV show] competition on the university premises, a day in the nearby forest [of Compiègne], a day of “personal challenges” or a day of innovation and each year, the Initiation organizers test a novel event. In addition, we have Color UTC, a race with colour-“bombs” which also welcomes Compiègne locals for a spot of ‘coloured’ fun.

## A portal to associative life at UTC

“Their ‘Induction’ Integration is the first image incomers have of UTC and its association”, underlines Maxime Dumaine. “It provides a means to demonstrate what UTC students are capable of doing and is also a portal to the rich associative world at UTC. Apart from members of our Bureau, all the association members were integrated themselves one year earlier – a sort of heritage they pass on to their successors”. Another ‘Asso’ is in

charge of the February integration. And there is also a 3rd structure with about 50 volunteers who look after the integration of non-French students: ESN Esperanto, a Compiègne offspring of the ESN (Erasmus Student Network). “International students admitted to UTC are invited to take part in these two weeks’ integration programme of events”, explains Émilie Jacquemin, President of this structure. “Following integration, we propose all sorts of activities throughout the first semester. For example, there are language coffee-shops (cafés) that allow them to exchange with French nationals, in the language of their choice or a two week-end “sortie”, one weekend in France and the other in another European city (Amsterdam (NL), Köln (Germany)). ... We book a bus, a hostel on arrival; about 60 all told and we have some good fun and the trips prove highly enriching for everyone”. The association also provides practical help to non-French students, for example, to help solve admin type problems that may arise and plans to launch a sort of ‘Social Erasmus’ project. Framed differently, this implies that non-French students get involved in “citizen” activities to help the local Compiègne population. Moreover, as with all other ESN offspring units, it is in charge of the internationals mobility for students and each year it organises a special “Mobility Information Day “on this very theme. Via its various missions, this association also contributes to defending and promoting one of the cherished values of UTC – sharing intercultural vistas. ■



**With about 100 active members the “Induction Integration” Asso is one of the largest at UTC.** This is the « Asso »

that organizes the welcome and integration for incoming students who come to UTC early September each year – with two weeks of festivities and around 1 200 participants, 400 of whom are in charge of chaperoning the





# 'Imaginarium Festival'

## top of the bill for UTC students

The "Artistic and Events Pole" of the UTC-BDE federates about 30 "assoc", some of which group together music-lovers, theatre fans, writers, photographers, etc. Others organize "events", some of which are large-scale. A good example here is the 'Imaginarium Festival'.

**The 5th edition of the Imaginarium Festival took place May 19-20, 2018 with 45 hours of concerts at the Tigre (the event setting in Margny-Lès-Compiègne ; 40 artists on stage ranging from the rapper Vald, the reggae dance group Danakil, the pop-rock group Therapie Taxi, Polo & Pan to Joris Delacroix electro-music...**

And in attendance, more than 13 000 festival-goers! This annual Festival, with its 600 000€ budget and huge audiences is by far the biggest event organized by a UTC "assoc". It exemplifies the students' know-how and 'dare-do' courage. In year 2014, when the UTC undergrads launched the idea and project from scratch, it was not guaranteed that they would succeed. And even today, the event remains a huge feat, because the "assoc" only contracts out work to a small number of professional partners: one for the 'son & lumière' [lighting and acoustics], a general stage

manager, a press and PR officer and as of this 5th edition, a Safety Officer.

Given the expansion of the Imaginarium Festival, we felt it would be wise to hire a specialist to advise us on safety matters and to help us make decisions should a problem arise", explains Florian Bertin, President of the Imaginarium Festival.

"Everything else here is organized by the students: 90 of us throughout the year and up to 150 during the Festival days. It is no self-evident thing to set up a festival on such a scale while we are students and volunteers too, but I feel we are getting better each year!"

### Volunteers? Yes, but professionals at the same time!

The "assoc" Bureau has the role of supervising all the operations, relying for this function on the various Poles, each with a specific mission: scheduling, partnerships, logistics, food & drinks, animations... To encourage the public to attend the various events, the students carry out PR campaigns in the entire territory of the Oise Department and in the nearby large cities: Lille and Reims. Via students matriculated in other establishments of the Sorbonne Universities Cluster, the "assoc" also has access to a Parisian public who now represents 15% of the audience. The efficiency and quality of the organisers' efforts can be seen by the fact that the number of festival-goers has more than

doubled up over 4 years and that for the first time this year – the Festival was 'tickets only'. The receipts (ticketing and drinks) covers almost 80% of the total budget outlay. The remainder is financed by the Region, by the Oise Department authorities, by the UTC, by the Sorbonne Universities cluster and by private external partners.

The City of Compiègne and surrounding townships provide the logistics and lend various equipment supplies.

A new battle in sight for the "assoc": sustainable development. This year, all the Festival flyers were printed on recycled paper and the Festival goodies are all made from bio-wool and other equitable materials. Dry toilets were installed and for the decors, the Imaginarium Festival used the services of an association that recovers other stage dressings and decorations from other major events and distributes them to smaller structures. Food trucks proposed vegetarian and vegan menus and their products came mainly from local products. The Imaginarium Festival had signed a partnership with a specialist company who recycled the organic waste into bio-methane and fertilizers and proposed pocket ash-trays to the festivalgoers and recycled the cigarette butts. Moreover, the students has assembled a solar recharging post for mobile phones. Lastly, animations served to make the public more aware of the benefits of eco-friendly habits. This is a societal responsiveness that numerous companies could reflect (and act) on! ■

### The volunteers speak out

**Florian Bertin became a member of the Imaginarium Festival "assoc" in his first year at UTC, acting first as a team member, then head of the 'animation' pole and finally elected as President of the "assoc".**

"This is a project that pleases me enormously and it was very enriching. We learned a lot in many different domains: project and budget management, 'going the rounds' for grants, establishing relationships with partners, with local elected authorities ... Personally, I devote a minimum two to three hours a week for this festival and even more during the weekends, especially as the 'big Day gets closer. But, no problem – we just have to get our act together and not waste any time between time for our lectures and for the festival. Remember, I'm not alone – all the volunteers round me work very hard to ensure that the Imaginarium is a great success!"







# When engineers defend ecological transition

The BDE pole 'Technology & Entrepreneurship' covers some 20 "assoc" that revolve round sharing knowledge, innovation and the professional personal development for the UTC students. Among these, we have OVD, short for "On veut Durable" [We want a sustainable world].

**T**hey are young, destined to become professional engineers and want to be at the front line of environmental transition. With this credo as their guiding force, they joined OVD. "OVD came to be two years ago and now has just over 20 members", recalls William Boffy, President of OVD « The first self-assigned objective was to join up with 'Precious Plastic'". The latter is a project launched by a young Dutch designer, which aims at democratizing the recycling processes for plastics using relatively simple, inexpensive machines, with the machine drawings and specs free on line: a grinder to transform wastes into a new raw material and injectors to mould new objects. The student members of OVD wanted to see some of these machines installed at UTC to provide a new life for plastic products. But they did not just content themselves by using the Precious Plastic technical drawings. Special added value units were installed with help from the UTC lecturers, to redesign the shredder-grinders. The objective here was to optimize safety considerations so that demonstrations could be made during various 'public events'" and, on top of this, to integrate the 'Precious Plastic' concept in the UTC curriculum. This is an emblematic intuitive set by the OVD members. But they also aim to advocate a sustainable campus. Besides the 'Precious Plastic' venture, OVD has several actions underway to develop waste recycling – installing paper bins in the 'centre universitaire' (residences, etc.), a co-run project with the CROUS, that will enable recycling of the food wrappings and containers at the university restaurant and cafeteria and to monitor change in user habits. Plus, a project to compost organic waste at the residency. Moreover and at its own initiative, the CROUS now offers vegetarian

menus at the restaurant, even before this became common practice elsewhere in France. "We have made students aware of this issue and it has proven to be a success", explains William Boffy: "Approximately 25% of the meals served today are "vegetarian".

## Another vision for a professional prospect

The second major aim of the "assoc" is to advocate and promote the teaching of sustainable development at UTC and, beyond this, to instil a debate on the role of engineers in tomorrow's economy and to measure the impact of environmental challenges on their training. "We are communicating more and more on this subject to underline that there can be other ways to live and work as engineers", adds William Boffy. "On our YouTube page we display interviews we obtained with two UTC professors, the economist Yann Moulrier-Boutang and the philosopher, Bernard Stiegler. We also meet 'strongly committed' engineers, like Mathieu Labonne, Director of Colibris, a movement that encourages local initiatives that serve Mankind and the Life. In the spring of 2019, the OVD plans to organize a Forum focusing on the theme of sustainable development, designed to help students either looking for information, or an internship or even for a first professional job to encourage them to attend these lectures and meet the actors of environmental transition. "We want to attract SMEs and NGOs engaged in the field of sustainable development and NGOs – for this reason, Forum attendance will be free of charge", explains William Boffy. In the framework of their lab.work and tutorials, students doing a Project management CC will

help plan the event and assess the cost of setting it up and running the Forum.

The ultimate aim of the OVD "assoc" will be to simply ... disappear! "Our failure will sign our success", concludes a smiling William Boffy. "When we disappear, this will imply that the sustainable development concept has become an integral part of UTC habits, and in this light OVD will no longer have any reason to continue to exist". ■

## The volunteers speak out

Majoring in computer science and its applications at UTC, William Boffy was offered an internship in line with his "assoc" commitments...

"I'm off to the Indian Ocean Island La Réunion in September, for a six-month internship at the Home Office of a Overseas Local Authority with the largest natural reserve in France, viz., the Austral & Antarctic Territories. My mission will be to redefine a data bank to be used by research scientists. The experience I gained with the "assoc" OVD helped me considerably. During the interviews, lots of questions focused on my commitments in the field of sustainable development and my interest in Nature, which goes back a long way. Before I was admitted to UTC, I had already done an internship in the Ethology, Cognition and Development Laboratory at the university of Paris-Nanterre, which notably studies animal behaviour."





# In favour of an ethical approach to using the Internet

The BDE's Solidarity & Citizenship Pole covers about 20 associations, many of which are committed to charity work or to promoting more sustainable life and consumer styles. One example is Picasoft, the credo of which is re-decentralisation of the Internet. Here is how it works.

**P**icasoft's logo – a stylized cat's head, show that it is a member of an Internet 'Collectivity' devoted to alternative, open, neutral and solidarity-friendly platforms, the acronym for which is ... Pussy-Cats (albeit in French "Chatons"). Like all the other members of the national network, Picasoft wants to see the Internet re-decentralized.

We can observe that a growing number of on-line services are concentrated in the hands and under the control of just a handful of actors, to the forefront of whom we find the GAFAM (Google, Apple, Facebook, Amazon and Microsoft). This level of concentration raises issues such as confidentiality, inasmuch as the economic models for these Internet service sector companies are based more or less entirely (more than less, in fact and increasingly so) on collecting and value adding to user data via their applications or "apps". "Picasoft is in favour of a "libristic" and ethical approach to usage of the Internet, respectful of our private sphere while guaranteeing freedom of speech", explains Guillaume Jorandon, President of Picasoft. "I use the neologism "libristic" since our

How are we supposed to transmit "fundamentals" to citizens so they can acquire an informed and reflexive practice in regard to use of digital tools?

objectives range from use of open software sources (viz., with open source codes) and this allows you to keep control of your personal data. Our target is essentially the engineering world, who often use software packages without really knowing what policy the editors have adopted in relation to data".

In order to make future engineers more aware of these challenges and issues, Picasoft organises one of two lectures per semester at UTC, delivered by specialist guests. In March this year, the guest was a representative of the Quadrature du Net [Squaring the Internet] NGO that defends the fundamental rights and freedom Internet surfers), who gave a description of how the Intents is censored in France. Picasoft also proposes workshops on alternative platforms for data collection: for example, using a cloud service on your own server, that allow you to avoid tools such as Dropbox or Google Drive. Lastly, Picasoft has installed servers that allow you to access freeware (i.e., free of charge and free to use) such as Mattermost, to an alternative to instant professional messaging, Slack, or again to Etherpad, an alternative to Google

Docs used to set up a collaborative mode platform ...

## Influencing the younger generations

Picasoft does not limit its efforts to just the engineers. "Our aim is also to make the younger generations aware as soon as possible of safe utilization of the Internet, Young people surf the Net intensely but do not realize what the consequences may be", underlines Guillaume Jorandon. "We participate in the annual Science Fête, in Compiègne – and last year, for example, we had pupils visit us from the local primary schools. And we also go out and give talks in classes in the nearby secondary schools".

Picasoft was created early 2017 and today counts around 20 members, but also some lecturer-cum-research scientists. The UTC-Costech Lab (social science and humanities) is also an "institutional" member. "In this case an institution pays a higher admission fee than an individual member", explains Stéphane Crozat, a research scientist working at the UTC-Costech Lab. "It is also a way for us to support Picasoft, notably to help pay for their server equipment. We also wish to attract other partners, for example the local lycée populations. Moreover, we note that the activities of Picasoft – especially where younger generations are targeted - have a direct bearing on ongoing Costech research in the area of digital literacy: how are we supposed to transmit "fundamentals" to citizens so they can acquire an informed and reflexive practice in regard to use of digital tools? For my Lab, this provides a most interesting field of research, definitely worth exploring." ■

### The volunteers speak out

Working with and for an association is enriching for the students and this also applies also to the academic staff. Witness, Stéphane Crozat, a UTC lecturer and one of the Founder-members of Picasoft.

"The reason I joined this association was that – inter alia – I was not fully aware about some of the subjects they address, even though I am a computer scientist by training and I teach in UTC's Computer Science and Its Applications Department. These points are evolving very rapidly, indeed some of the students have skills that only a few lecturer-cum-research scientists possess at UTC. They, for example, organized a workshop of cyphering of e-mail and data exchanges where I learned a lot."



UTC students' association portal: <https://assos.utc.fr>





## A new look at Industrial Transition and Employment

Interactions addressed two questions to Xavier Bertrand, President of the Region Hauts-de-France

**What is your lead time, in what sectors and which specific ecosystem do you rely in Hauts-de-France to ensure your success? Is the attractiveness of the Lille metropolitan area synonymous with a form of mono-polarization in regard to how the Hauts-de-France are organized, the risk being widening differences in this Region as a whole ?**

In 2017, the Hauts-de-France became the N°1 French Region, in terms of job creation (2 000 according to Trendeo). I stand convinced we made the right choices when we decided to support industry! This is notably true by way of the upturn observed in the automobile sector (Toyota, but also PSA and Renault), given that assembling a new car or even a new gear-box represent a decade of stale employment.

I want my Region to preserve its position as an industrial leader: one that creates employment, attracts enterprises, invests in robotics and anticipates coming industrial change and mutations. And we can do better, inasmuch as industry must continuously upgrade and modernize its image. Notably in the eyes of our young people and women. Yet the overarching strength of industrial activities is that they can provide a place for everyone through diversity. Our Region cannot substitute itself for industry but rather endeavours to create an ecosystem that favours industries in the Hauts-de-France;

We collaborate well with the MEL (European Lille Metropolis). Yes, indeed, our Region is attractive and so much the better! When an enterprise wants to settle here, both Region and MEL stand shoulder to shoulder to help them install themselves and we make appropriate provisions, as needed. To illustrate this, we, the MEL and the city officials of Tourcoing cemented the inaugural stone of new premises for Booking in that town. This will prove profitable for the MEL and for the Region too. But not just the MEL and its surrounding desert: I want to see a proper balance in land planning – I do not want to see the growth of just the small and middle sized towns, with rural outposts forgotten and left in the lurch.

**What “open-ended” development strategies (in Europe, in enterprise ... as various transition take place), would you like to implement in order to stimulate ‘industries of the future’ (in its wider connotation) and mid-range employment prospects?**

Any development strategy must necessarily be open ended: closing out one’s horizon, whether you are a national or a regional institution does not help you progress. Politicians do not have the power to create jobs; this role lies with the entrepreneurs. You therefore have to listen to them because they better than anyone else know what constraints exist in their sector of business. Again, we must also be able to top, speak to them, to help them come to grips with the lightning speed changes induced by new technologies and the markets in which they operate.

Our Region launched IndustiLib, a platform for innovation that is designed to help entrepreneurs to gain better knowledge of the most recent trends and innovations. For the same reasons, we developed our “Industries for the Future” programme, financially supported by the Hauts-de-France Region. This support helps industrial concerns to modernize their equipment; thereby gaining in efficiency and consequently in competitiveness – one of the major challenges

facing French industries today. Lastly, we have launched a novel pregame called ‘Robonumerique’ to encourage enterprises – via Regional financial aids and grants – to adopt robots to increase competitiveness of their industrial sites.

I personally chose and proposed the ‘Industries for the Future’ programme because I most strongly believe in this combination of classic industries and new technologies to create and develop thousands of jobs (that cannot be relocated and carry high added value) to revitalize the Region’s activities. It is no small affair but our Region is ideally situated to meet the challenge. We are also committed to what is called the third industrial revolution, or “Rev3” to accompany our region’s enterprises in their progression towards innovative activities, to enhance, as of today, the creation of tomorrow’s professions and trades. In the Hauts-de-France, we wish to be, and intend to stay, one lap ahead. ■

I personally chose and proposed the ‘Industries for the Future’ programme because I most strongly believe in this combination of classic industries and new technologies to create and develop thousands of jobs (that cannot be relocated and carry high added value) to revitalize the Region’s activities.

More at:  
[webtv.utc.fr](http://webtv.utc.fr) > Exchange  
between Prof. Yann  
Moulier-Boutang and  
Jeremy Rifkin

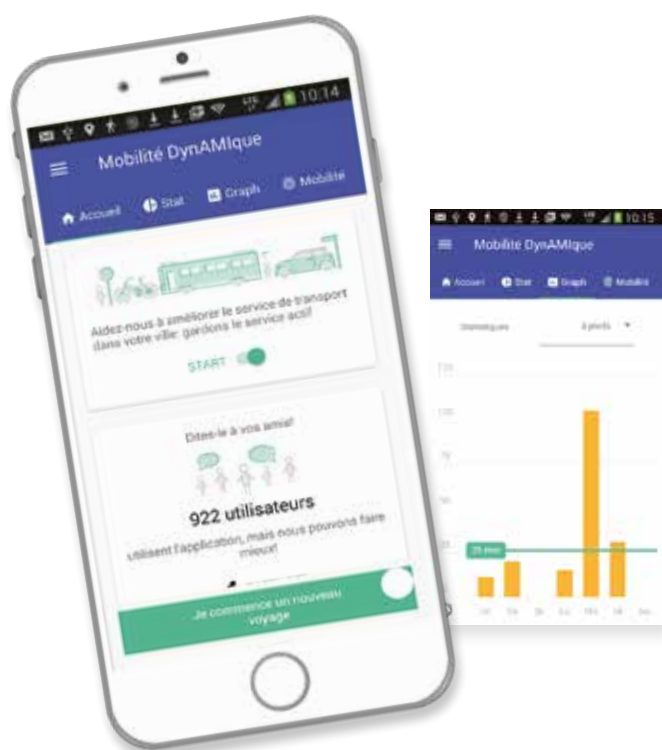
[www.hautsdefrance.fr](http://www.hautsdefrance.fr)

### DID YOU KNOW THIS?

In the annual status report issued by the national Banque de France for 2017, we note that the industrial turnover of the Hauts-de-France has progressed by +4.5% and the figure anticipated for 2018 is +10.6% for investment outlay.

According to the report published by Business France, the Hauts-de-France Region comes second in the list of the most attractive Regions in France, in terms of saved or created jobs.

# The Oise 'department' becomes a living-Lab



Cristina Pronello, a research scientist working at UTC, was invited by the "So Mobility" workshops, April 5, 2018, to present her "Mobilité Dynamique", an "app" enabling measurements of multimodal transportation, developed in a partnership with the Oise department public transport union (SMTCO) and UTC.



**In fact, the idea initially came to be in Italy end-2015. The lack of 'regular' mobility studies, deemed too expensive, encouraged the Greater Turin authorities (with some 2.5 M inhabitants), in the Italian Piedmont region, to consider the possibility of accessing real-time movement data to help them make appropriate 'traffic' planning decisions.** In her capacity of Chairperson of the Piedmont transport regulation authority, Cristina Pronello chose to think about setting up a data collection platform, to access, and analyse data about urban mobility, the data coming in from various sources, via a mixed and specific method of approach based on a set of quantitative and qualitative factors.

The method developed by Professor Pronello aggregates open data, from the local Navigo Pass net and even from Internet 'tweets' (although the latter are of little use inasmuch as they are not geolocalised), from transport operators' sensors (Transdev and Keolis) and she decided to launch a specific "app" called "Mobilité dynamique") for Android and IOS, which records (with the user's agreement) mobility data. The 'app' can

follow foot, vehicle, bike, train or bus trips. All the user needs to do is activate the Smartphone's GPS option. To obtain a higher degree of data reliability, each move can be notified in real-time. Cristina Pronello collects the data on a single server station where they are analysed, processed and displayed in chart and/or map formats ... once the data have been processed, we get a better understanding of transport behavioural dynamics. It is an innovative approach which, in the long term, will allow us to coherently and optimally organize various transport modes. This can lead to pinpoint needs and to concrete implementation, e.g., a new bike lane. Now titular holder of a Chair in Smart Mobility and Territorial Dynamics at UTC, Prof Pronello is using her platform in applications for Compiègne, Beauvais and Creil cities and their suburbs, all in the Oise Department. A "living lab" was created to collect the opinions of users via on-line questionnaires via groups of reflection. In Italy, this polling consultation saw over 4 000 contributions and a 1000 persons registered with the Living Lab and took part in face-to-face meetings to exchange as to their needs. The investigation led to a classification of users into one of three categories: opportunist neo-Luddites (often technophobic), then the neo-classics (each representing 25% of the population) and the "hedonists" (technophiles and ecologists) representing the other 50%. "My objective", explains Prof Pronello, "is to educate users, making

them aware of their personal behavioural patterns and to encouraging them to change. Change here will call for 'education in mobility issues'. But we must remain pragmatic and seek an associate economic model which so far has no existence. Multimodal solutions, as she sees it, are expensive and not used much. People tend to know their 'routes' well and are not ready to believe in alternatives, except when there are transportation strikes.

Today the "app" only collects data, but the aim is, for example, will be to identify 'best routes' (time, frequency, preferred...) to cross a city by bike at rush-hours. Each participant will thereby enrich this mobile 'app' and help the research team to progress with their analyses and conclusions.

Cristina Pronello wishes to set up partnerships with members of So Mobility and to create a Living Lab think tank, with participants of various ages, backgrounds and income brackets, so as to gain a better understanding of real public expectations in terms of transportation. Today the "app" only collects data, but the aim is, for example, will be to identify 'best routes' (time, frequency, preferred...) to cross a city by bike at rush-hours. Each participant will thereby enrich this mobile 'app' and help the research team to progress with their analyses and conclusions. ■

More at :  
<https://my-moby.com>

<https://www.somobility.fr>

<http://seineouestdigital.fr/sismo/>

Interview of Prof. Cristina Pronello - "A Chair to develop sustainable 'smart' mobility":  
[www.webtv.utc.fr](http://www.webtv.utc.fr)





## SEMINAR

# The General Data Protection Regulation (GDPR)

Applicable as of May 25, 2018, a new European regulation (the General Data Protection Regulation (GDPR) stipulates how personal data can (or cannot) be processed. It is a text that proposes several interesting provisions designed to protect our private sphere on the Internet. Lionel Maurel, a lawyer by training, public librarian at the University of Paris Lumières and a member of the association 'Quadrature du Net' [squaring the net], gave a lecture at UTC on this subject. He deciphers the main challenges of this new piece of European legislation.

## How does one define 'personal data'?

Personal data refers to all and any information that enables an identification of an individual: which can be one's name, opinions, social security matriculation, bank account N°, one's PC IP address, eye-iris prints, finger prints or a photo ... as of 1978, France pioneered information protection with its law called "EDP and freedom Act". As public services became more and more computerized, the aim of this law was to prevent personal data files being drawn up by the State authorities. Since the 1990s, certain principles underpinning this French law have been incorporated in European directives. The GDPR unifies and reinforces these provisions.

## To what extent does the GDPR regulation signal an important step forward?

Before GDPR, it was fairly easy for non-European companies to by-pass the then existing legislation. From now on, the processing of personal data appertaining to European citizens, no matter the agent doing so, must comply with this regulation. It constitutes a "first ever" on a global scale. It took over two years of debate in the European Parliament to achieve this result. The Google, Facebook... lobby put up an intense attempt to

block GDPR legislation but the civilian society prevailed.

## What are the main areas of progress you see, in terms of user protection?

The default position here must correspond to the least accessible configuration in regard to one's personal data.

This new legal framework contains some very important provisions such as the need to secure free and informed consent from those concerned. This means that for the collecting, analysis and exchange of personal data, the companies (or institutions) who do so must firstly (and in most cases) obtain express consent. For example, simple consultation of an Internet page can no longer be seen as a tacit consent to receiving cookies. It is henceforth illegal to make use of personal data as a condition to accessing a service. It must remain possible to parameter various options and levels of confidentiality. The default position here must correspond to the least accessible configuration in regard to one's personal data. Functions such as face recognition proposed by Facebook when a profile is opened cannot be activated automatically.

## What part of this domain should receive special attention and in-depth investigation?

The GDPR demands that that must be used in a clearly defined manner, justified by service needs and transparent as seen from the user's view.

Storing data with no specific finality will not be allowed. However, there may be exceptions such as "legitimate interests". This is a measure that relates to the connection data needed to ensure security with identifiers/passwords. But nonetheless, one must remain vigilant. There is a fuzziness in the concept such that the door is ajar for abuse by market agents. Agents whose economic business model relies on advertising data files could easily raise the issue for survival of their services.

## What sanctions can be taken if noncompliance is noted?

To date, the sanctions the CNIL could hand down were limited. As of now, with GDPR, the limit is up to 4% of an offender's annual turnover, which is no symbolic value, especially for the 'giants of the Internet'. Before this, individual legal action had to be taken against the major companies. Now, joint legal or 'class-action' as it is called is permissible. The association 'Quadrature du net' has launched several legal complaints against the GAFAMI (Google, Apple, Facebook, Amazon, Microsoft, IBM) and several thousand persons have subscribed to these actions in court. ■

[www.laquadrature.net/fr](http://www.laquadrature.net/fr)

[www.uplum.fr](http://www.uplum.fr)

Lionel Maurel – lecture (in French) « Données personnelles et vie privée; ce qui va changer avec le RGPD » on [www.webtv.utc.fr](http://www.webtv.utc.fr)

SUSTAINABLE DEVELOPMENT

# A greener campus for UTC

©Marilène Berthaud

Whether it be in its training module contents, in student initiatives, in governance or management of its buildings, UTC has been committed ever since its creation to encourage and enhance environmental and societal innovation. With the Government's decision to implement a 'green plan' for Higher Education establishments and institutions following the conclusions of the so-called Grenelle Environment conference [2007], the pace has been accelerating.

**S**ince its creation in 1972, UTC has been building up its attractiveness through an innovation-intensive approach in phase with today's societal challenges. Sustainable development is deemed paramount both for the economy and for humanity at large and is now integrated in the minds of students, lecturers, research scientists and indeed all the UTC staff and personnel. In its ranking, the magazine L'Etudiant placed UTC, as early as 2013, among those establishments most engaged in sustainable policies in training, in research activities and life on the Compiègne campus. Today our campus is an active partner for the "3rd industrial revolution" advocated and supported by the Hauts-de-France Region and can be seen as a societal laboratory for the future, both in the way it operates and is managed, in the contents of its teaching curricula and in the research activities of the university. Two excellent examples of a technological show-case can be seen: 1° in The Daniel Thomas Innovation Centre which has notably low needs in

*"Over the past three years, we have considerably reduced use of pesticides and now that has been stopped completely. We use only manual weeding and spread layers of wood chips round our shrubs and over flower-beds to halt weed growth"*  
Guillaume Hervet,  
Head of the UTC Logistics Service and Safety Regulations Service

heating, close to the values one would expect from a "passive building"; 2° the electric vehicle charging platform Stella, managed by a 'smart' network designed and implemented by UTC's Avenue Laboratory. In terms of research, 'green' chemistry domains are to be found at the PIVERT platform and likewise experiments conducted by UTC-Heudiasyc Lab on autonomous vehicles are significant policy thrusts in a sustainable direction and demonstrate the university's 'green' commitments. Numerous aspects of sustainable development are addressed in the training curricula proposed to the undergraduates. Certain courses are directly aimed at these issues – e.g., urban engineering (UTC-GSU), or strongly connected to energy issues and transportation or again humanities and technology (UTC-HUTECH) which give perspective to technology-intensive innovation faced with major economic and societal changes, based on humanities and philosophy.

## Future-oriented dynamics and strategy

The dynamic character of UTC student associations lies at the heart of UTC's exemplarity in terms of the quest for sustainable development. "It can be recalled that in UTC culture, a citizen dimension is to be fostered, that students should be involved inasmuch as they will become the managers of tomorrow", underlines Prof. Philippe Courtier, President and Vice-Chancellor of UTC. Open-minded and dynamic, the 1210, student associations regularly initiate action in favour of environmental protection, societal issues and ongoing economic change (cf. intra this dossier specifically on the student associations, p5-12). There are some highly emblematic actions, such as CAC' Carottes (distributing local vegetables and fruit), or the eco-'responsibilisation' embodied in the Imaginarium Festival – dry toilets, goblets with an add-on redeem charge, recharging mobile phones using solar panels ... are now well-established events and are thriving. Some others will soon be launched such as the curation of a Green Lab, A Fab'Lab specially devoted to sustainable development with



not only workshops to help design and assemble objects, but also making available certain set-ups so that participants can initiate further actions in green chemistry. Partnerships with various structure outside UTC are under way currently. The recent creation by UTC alumni of a place designed to encourage and enhance innovation in an alternative location, called the Hermitage, which will be able to offer new opportunities to transcend classic innovative models.

In a more global vision, UTC's President and Academic Board integrate sustainable development in all their decisions, whether they relate to day-to-day management questions or to longer term strategic policy framing. Some very concrete examples are to be seen in promotion of selective sorting of waste, the fight against energy waste, a more ecological maintenance policy for gardens, lawns, etc., or again the inclusion of "social" provisions in public contracts. In the area of transportation, battery recharging posts for all-electric vehicles have been installed. The 'constructive' partnership agreement with the authorities of the City of Compiègne have enabled better public transport offer and the creation of a specific bike lane running along the banks of the River Oise, interconnecting the various university campus buildings. In order to ensure a precise monitoring of the above actions, a sustainable

development and societal responsibility watchdog and benchmarking structure, set up in 2011, has enabled a policy of continuous improvement. Five policy priorities, ranging from governance to training course and research contents, with their environment-friendly and social policy provisions being assessed once a year. We are building a future for UTC every single day ...

## Ecological management of UTC's 'green areas' for the purpose of preserving local biodiversity

Today our campus is an active partner for the "3rd industrial revolution" advocated and supported by the Hauts-de-France Region and can be seen as a societal laboratory for the future, both in the way it operates and is managed, in the contents of its teaching curricula and in the research activities of the university.

UTC continuously improves its maintenance policy for the campus' green areas in order to make them more ecology-friendly. This year, for example, the techniques of lawn-cutting, trimming and scything have been modified to preserve biodiversity on our lawns and flower-beds. The UTC logistics and safety regulations service has been committed for several years now in promotion of sustainable development approaches to maintaining the university's "green areas", a decision set in motion by the President, calling for new steps. New actions will be undertaken in the

framework of a Green Plan launched by the minister on charge of Higher Education. Guillaume Hervet, Head of the UTC Logistics Service and Safety Regulations Service, in charge of the local Green Plan dossier, explains "Over the past three years, we have considerably reduced use of pesticides and now that has been stopped completely. We use only manual weeding and spread layers of wood chips round our shrubs and over flower-beds to halt weed growth". To favour local animal and plant life, the campus lawns are cut less and less. The mowers are only brought out occasionally, once every three weeks and used only on the portions near buildings and access paths. The fine cut grass is left (mulching). The more central areas are cut at the end of summer-time when the insets and plans have finished their normal life cycle. An experiment in eco-grazing is underway with a small flock of sheep on the Pierre Guillaumat site. "We chose this location 'outside' the city bounds because these sheep, a breed from [the Breton Atlantic island of] Ouessant, like calm conditions", adds Guillaume Hervet. An association, the Arche (which employs persons suffering from various handicaps) helped implement the project. Each week a shepherd monitors the animals, which are autonomous in terms of feeding/grazing. Three grazing plots are used in turn to reinforce site biodiversity. Eco-grazing is a sustainable management alternative for green areas and at the same time enhances and encourages biodiversity, not forgetting the improved social links that arise through people exchanging about the life of these animals on UTC's lawns. ■

### START-UP

# A 'chatbot' to monitor your health

When booking a train ticket, or contacting an after sales service, we have all already experienced 'exchanging' with conversational robots, the so-called 'chatbots', which are increasingly present on Facebook as well as on on-line sales outlets. Olivier Thuillart, who graduated from UTC in 2008, majoring in Bio-engineering, thought that chatbots could prove to be very useful in the health care domain... provided we have a perfect mastery of the safety constraints that apply to health-related data.

**“What we observe today is a need to optimize time absorbed in medical activities: there are less and less anesthetists, less doctors and more and more patients at home with a complicated care protocol and extensive medical equipment” notes Olivier.**

“Now we may ask: what if conversational robots could assist both patients and practitioners? It was on the basis of this thought that I cofounded Botdesign in 2017, with my associate”. The strong point of these two associates relies on their excellent knowledge of health questions, which has enabled them to propose tools for the professionals and practitioners, compliant with current French legislation. The potential for conversational robots, in data analysis, in clinical studies, in patient monitoring ... is very wide and rich. “We know, for example, that certain patients stop their treatment as soon as they get home. A chatbot can remind a

patient of this and check if the medicinal drugs are being taken correctly, or even inform other family members or the family doctor, if something serious is detected, provided the patients themselves are equipped with appropriate 'connected' devices”, adds Olivier.

The first conversational robot – for the Naturactive line of products produced by the Pierre Fabre Laboratories, has been on line since February 2018. “We also work with French hospitals, assembling and programming a chatbot for pre-anesthesia obstetrics. The robot will ask all the standard questions (first child? weight ...) and will transmit the answers to the anesthetist who will consequently be able to focus on particular medical and human points with the patient in the pre-op rendezvous. We are also working a lot with patient associations, for example with the French Association for Diabetics,

to come up with a chatbot that can help diabetes patients to look after themselves better and also to answer their questions”.

After the field commissioning of these early chatbot models, the associates intend in the near future to do some fund-raising to consolidate the technological developments and to improve the real-time message system INFINITY, which allows medical workers to communicate live, real time and in total confidentiality. “We are also working man-machine interactions,” adds Olivier, “on voice integration, on 3D avatars that will allow operators to enjoy a more gaming exchange with the robots, notably when children are involved. We also plan to develop French and Spanish language chatbot versions, for the European market and beyond the EU, the global markets”. ■

[www.facebook.com/Naturactive/](https://www.facebook.com/Naturactive/)

## THE GUY DENIÉLOU PHD PRIZES

2018 – Four prizes for “excellence”

### THE PLASTIC OMNIUM PRIZE

**Blanche Legin**

for her work on ceramic composites

UTC-ROBERVAL LABORATORY (MECHANICAL, MATERIAL AND ACOUSTIC ENGINEERING) - FRE UTC-CNRS 2012

Blanche investigated damage signs in composites with a ceramic matrix, viz., those that will equip future generations of aircraft engines. Experimental tests, combined with computational models enabled her to establish a set of scenarios to identify and predict operational fatigue and wear of these ceramic composite parts, as needed to anticipate in-flight behaviour.



### THE ARC (GREATER COMPIÈGNE) PRIZE

**Fouad Almohammed**

for his work on a bio-refinery concept

UTC-TIMR LABORATORY (INTEGRATED TRANSFORMATIONS OF RENEWABLE MATTER) - EA 4297

Fouad's studies consisted of his proposing a new approach to valorisation of sugar beet, which is the source of some 20% of the world's sugar production. To help the sugar sector industrialists to improve their competitiveness, he used the concept of the bio-refinery which can valorise the whole plant via innovative processes.



### THE UTC FOUNDATION PRIZE

**Laurine Bogaert**

For work on a no-break oil production press

UTC-TIMR LABORATORY (INTEGRATED TRANSFORMATIONS OF RENEWABLE MATTER) - EA 4297

Laurie studied the mechanical properties of screw-presses used to extract oil from oil-bearing plants, currently a product subject to ever increasing demand. The data she collected from experimental test rig sensors allowed her to identify the importance of the screw configuration and geometry. This led her to propose various digital models to increase the profitability run of vegetable oil production.



### THE AIRBUS SAFRAN LAUNCHERS POSTER PRIZE

**Jessica Désabres**

On dehydrating sludge

UTC-TIMR LABORATORY (INTEGRATED TRANSFORMATIONS OF RENEWABLE MATTER) - EA 4297

Sludge, which represents the main waste matter of urban areas and industry, is composed of water and suspended matter. For the purpose of recycling the sludge, Jessica studied an electro-dehydration technique where applying an electric field leads to an increase in the volume of water content removed. She also used an electro-wash process to improve filtration of pollutants, e.g., heavy metals.



More at: [www.webtv.utc.fr](http://www.webtv.utc.fr) >

"Ces thèses qui changent la vie" [Theses that change our lives]

## PEDAGOGY

# Pedagogical innovation : a core policy for UTC

Reverse classes, group projects, giant puzzles, and interactive tables: UTC has designated pedagogical innovation as a core-policy thrust. Why and for what purpose? The objective is to enable students to acquire skills in an 'uncharted manner'. Interactions zooms in on two activities organized in Compiègne, this April, in the framework of the Sorbonne Universities Cluster.



**Tuesday April 17, on the parking esplanade of the UTC Benjamin Franklin Building, thirty undergraduates set up stands to present the concepts that underpin supply chains in logistics.**

The event has a festive air inasmuch as it celebrates 25 years of the UTC specialist option 'Integrated Production and Logistics' (UTC-PIL). Stock optimization, no-break improvement techniques, lean management, the 5 S method [a workshop organization with 5 Japanese words, translated as "Sort, set in order, shine, standardise and sustain"]; dozens of concepts were illustrated on the student stands. In one corner of the parking space, Camille Poulain has perfected a grenadine syrup machine to represent "push" or "pull" flow production. In the former case, a large quantity of products is

produced and stored, awaiting customers. In the latter case, production is "on demand" details this student in her 5th year (specialized in 'Integrated Production and Logistics – UTC-PIL). And she proposes syrup drinks to her stand visitors, from one or other production method: quench your thirst and see innovation at first hand. These activities are coordinated by Dr Joanna Daaboul, lecturer-research worker in the PIL specialty. "The students all addressed themes related to skills and key facts in supply chains", she adds. These various activities are coordinated by Dr Joanna Daaboul, a lecturer cum research scientist in charge of the PIL specialty. "The students addressed themes related to key skills and knowledge used in supply chain concept", she notes. But what were the origins of this wish to innovate in pedagogy? "In the PIL specialty



courses, we seek to implement novel pedagogical approaches”, explains Dr Daaboul. “The world is changing and our university must adapt and change consequently. During training, we have our students face up to novel pedagogies and this is seen as important by them”. And visibly the concept was a “bull’s eye” success.

This afternoon, numerous students came to discover the work carried out by their class-mates. “I am a student in bio-engineering, and I confess I did not know all these concepts”, says Manon, in her 4th year at UTC.

“The gaming approach helped me understand the underlying challenges”. Apart from the stands, there were round table debates with professionals of the supply chain. This enabled a combination of the practical and the more theoretical, aspects. This produced a mixture that Liza, another 4th year student found enjoyable. “The exchanges we heard made us more aware of the ecological parameters of industrial production or the concept of the 4.0 Factory which is introducing digital techniques and technologies at the core of the production process”. From the industrialists’ point of view, this profile of hybrid student-engineers is highly satisfactory. “Trainees we receive come with

“The students all addressed themes related to skills and key facts in supply chains”. Joanna Daaboul, a lecturer cum research scientist in charge of the PIL specialty

excellent theoretical knowledge about production management and they also know how to rapidly adapt to the field realities”, details Romain Gunst, an engineer working with Servair. Augustin Margerit, a trainee doing his end-of-studies placement at Servair was able to benefit from these innovative pedagogies.

He cites the support he found in his UTC courses to build his personal professional project. “During my training, I studied production and logistics but also ‘continuous improvement’. These skills and knowledge serve me today, every day.”

Two days later, there was a new challenge for the student-engineers: they were given 24h to assemble a huge puzzle. In the lab room set aside for this, there were some 15 students. You could see the concentration on their faces. “We have exactly 24h to assemble a puzzle with 32 000 pieces”, details one of the participants. “The challenge is awesome”. Jean-Gabriel, a 1st year student at UTC came along to encourage his comrades. “I’m busy with another activity in the Sorbonne Universities Cloister week, so unfortunately I cannot be here to tackle the puzzle with them. To be quite honest with you, I don’t think I have the patience needed and I must admit: their work really impresses me”. The students subdivided the puzzle into different

geographic zones. Working parties, sorting and scheduling provisions were made in order to prove successful with this challenge. “On the 1st day”, says one of the organizers, “the students had 24h to come up with a strategy to solve the puzzle. On the 2nd day, they were allotted 24h to implement their strategy”. Thus, using a gaming approach, the students learned to cooperate better, to solve real problems and to face difficulties together. These skills which are of paramount importance for future engineers cannot be taught completely is an ex cathedra classroom lecture. After a short spell of sleep and after long hours at work, the students had successfully assemble 2/3rds of the puzzle. As one participant put it “Those who want to continue can do so. We’ve done a great job and the puzzle has advanced a lot”.

Whether the students organize stands to, present theoretical concepts to the public at large or optimism the solving of a puzzle, all these different pedagogical activities share one point: they enable the students to acquire new skills in an unusual way. This indeed lends meaning to innovation. ■

[www.sorbonne-universites.fr](http://www.sorbonne-universites.fr)

More at: [www.webtv.utc.fr](http://www.webtv.utc.fr) > « Serious game logistics at UTC »

<https://interactions.utc.fr> > « Pedagogical Innovation: the UTC approach »

## EDITIONS

# In the collection “Encre marine des Belles Lettres” Reflexions about face transplant operations

Some thirteen years after the first successful partial face transplant operation performed by Prof. Bernard Devauchelle at the teaching CHU hospital at Amiens, a book entitled “Faire face, faire visage” [The Courage to remake a Face] published in the collection “Encre marine des Belles Lettres”. This exceptional scientific, technological and human adventure is revealed via eyewitness accounts and analyses of practitioners, philosophers and the patients.

**This book represents one of the supports implemented in the framework of the scientific programme “Technologies and Human Traces” administered by the UTC-COSTECH lab, who addressed the issues involved in transplant operation.**

It is the result of original research investigations carried out by several research scientists in the field of Philosophy, who spent 15 days in complete immersion at the maxillo-

facial surgery unit of the CHU Amiens. It was an experience that enabled François Sebbah – a former UTC-COSTECH Director, currently Professor of Contemporary Moral Philosophy at the university Paris Nanterre and Aurore Mréjen, PhD in philosophy and research scientist at the LCSP (Laboratory for Social and Political Change) at the university Paris Diderot, to critically assess the theory developed by philosopher Emmanuel Lévinas about the role faces play in our relationships to others, in regard to the realities experienced by practitioners and patients. Going beyond the strict theoretical dimensions, this approach allowed the authors to analyses in depth this debate over and above its purely aesthetic considerations. When, for instance, is it legitimate to propose that a patient in good health otherwise accepts to undergo a face transplant operation, with its risks?

The answer can only come case by case. The text by Dr Sophie Crémades, a psychiatrist at the CHU Amiens and the experience related by two persons who have benefited from facial reconstruction surgery serve to demonstrate the complex role played by our faces in the relationship to ourselves and to others. Judging by these varied points of view, we can see that our face is more than just an ‘organ’; indeed it is a mark of our ‘humanity’, with its capacity to convey feelings and its vulnerability. The pluridisciplinary medical team that surround face transplant operations takes all these psychological and social factors into account.

## A pluridisciplinary approach

The four texts that constitute the book describe the face transplant operation and its protocols and try – each in a specific manner – to relate, as best they can, the experience to its deeper meaning. The texts intermesh and echo each other. The third Part of the book is an exchange with Professor Bernard Devauchelle, Head of the Maxillo-Facial Surgery Unit at the CHU Amiens. This particular text throws light on the need to combine technical virtuosity for what is an extremely complex operation and an understanding of the patient’s personality, in order to rebuild a face that ‘lives’, conveys feelings and the personal ‘history’ of its owner. Prof.

Devauchelle was delighted to welcome the academic mission, its members being totally unfamiliar with the world of medicine. “Interdisciplinarity lies at the core of what we have been doing for 20 years now, with projects that involve historians, sociologists, anthropologist and engineers ... we attach a high degree of importance to research activities and to innovation”. Inasmuch as he is an enthusiast for art, history and philosophy, the atypical surgeon Bernard Devauchelle is also a driving force for numerous extra-medical projects with ‘Faire Face’ – PIA, an institute of which he was co-founder. The ‘Institut’ carries out research for medical, technology-intensive and humanistic purposes. There is also an exhibition and studies on WW1 in a partnership with a British university and a survey of the masons’ work restoring stone faces on the Cathedral of Amiens, compared with the surgeons who look after patients today. These are rich forms of collaboration that open up new prospects for further research. The book “Fair Face, faire visage” perfectly holds its rank among initiatives that involve social sciences, humanities and Society at large. ■

**Faire face, faire visage.**

Amiens, Hôpital Nord, dix ans après la première greffe [Amiens, CHU hospital, First face transplant, ten years later]. Collection Encre Marine, Editor: Les Belles Lettres [www.webtv.utc.fr](http://www.webtv.utc.fr) >key-word « greffe »





# Managerial talent and a good knowledge of processes

Jean-Michel Condamine, who graduated from UTC, majoring in Process Engineering (UTC-GP), is currently the Chief Operating Officer for the Cabin & Structures Segment for the Zodiac Aerospace Group, with its 56 factory sites and just over 15 000 personnel spread round the world. His success story is the fruit of a rich track-record where he was able to prove his possession of managerial and strategic policy skills, in addition to his technology-intensive acumen and know-how.

**“It was the close links with the industrial world and the strong innovation & research policy thrust at UTC that largely enriched my years of study there”** recalls our

53 year old senior manager, who has several thousand personnel reporting to him. Whilst making the most of the high quality teaching he enjoyed at UTC, Jean-Michel also participated in the UTC Junior Enterprise to apply newly acquired skills and knowledge professionally. The balance struck between serious engineering studies and a rich student association world, with its numerous opportunities, are among the highly positive features he remembers from his years at Compiègne. He was, for example, President of the UTC Undergrads' Gala in 1989. During his UTC studies, his internship at the Yves -Saint-Laurent, Lassigny site allowed Jean-Michel to combine a passion for electronics, computer sciences and chemistry. During these 6 months in the world of luxury goods, he took part in the implementation of an automated analysis set-up based on chromatography to improve quality assessment (QA) and to reduce needs for resources: “The organic molecules used in perfumes are very complex and can lead to creation of unwanted by-products. The challenge consisted of facilitating industrial standardization and reassignment of personnel to tasks that carry better added value”. After graduation, Jean-Michel was offered a first job in research with Rhône - Poulenc in its British site. It was here that he improved his knowledge and fluency in English and his appreciation of Anglo-Saxon culture. It was a strategic move that paid off a few years later when he was recruited by the giant US oil company Exxon. “My ‘GB’ experience allowed me to adapt very quickly to the Exxon company unit in France and to communicate easily with experienced managerial staff, mostly US expatriates”. He learned a lot during these 4 years at the Normandy unit, based at Notre-Dame de Gravenchon. His direct access to the corporate hierarchy and objective-driven management enabled the Frenchman to hold his rank and position well. After proving his talents in the field, he was then offered strategic responsibilities at the Exxon European HQ in Brussels. “My job consists of facilitating the dissemination, in appropriate terms and ways, of HQ policy orientations to the 24 European sites”. This was a function that made him become a member of the Group's world management network, carrying out numerous professional visits and trips over the entire European continent.

## Technological know-how, strategy and human contacts

Inasmuch as he wanted, now aged 35, to widen his horizon to take on more international activities, Jean-Michel aimed at directing a factory unit. The plastic engineering company Alfapac (later renamed the Sphere Group – invited him to direct their benchmarking site at Luneray, near Dieppe. Drawing on his experience with a multinational company, he succeeded in increasing the company turn over by 50% in a little less than 3 years. The Board members then asked him to save their Czech Republic factory which had been accumulating poor returns and was subject to numerous plant breakdowns. This mission too as a success, both in terms of manpower questions and technical improvements. During the 2008 financial crisis, the Sphere Group had to repatriate Czech-made goods back to France to avoid massive personnel reduction. Jean-Michel Condamine assumed the personal task of helping redeployment of most of his salaried Czech workers to other local companies. The factory site was then sold and the production tools were brought back to France. This was something of interest to the Zodiac Group who recruited him in 2009. “At the time I was totally ignorant of the aerospace sector but fortunately my knowledge of industrial processes is something that runs transverse in essence to all industrial activities”. He was given the responsibility for the aerospace equipment maker Driessen Galley's based both in the Czech Republic and in the Netherlands, a company recently acquired by the Zodiac Aerospace Group. Jean-Michel succeeded in restoring the confidence of the company's personnel, saved it financially and, moreover, signed a superb contract with Airbus Industries, amounting to 1 billion euros, two years later. In 2012, he was given the responsibility for a complete segment, with its 4800 personnel before being appointed to the role of COO (Chief Operating Officer) in the Zodiac Group's Cabin & Structures Segment in 2015. His new functions, however, do not stop him

from going into the field regularly. “Even if the purely technical issues are no longer my main areas for concern on a day-to-day basis, deep down I remain an ‘industrial man’”. Indeed, our high-flying, senior manager Condamine has an acute sense and awareness of human contacts, which together with the reasoning of an engineer, represent qualities primordial to the job. ■

## BIO EXPRESS

**1992 - 2000** Exxon : Production Engineer, NCS Europe planner  
**2000 - 2009** Group Sphere: Factory General Manager at Luneray and Managing Director for the Czech Republic  
**2009 - 2012** Group Zodiac Aerospace: Managing Director for Driessen Galley's in the Czech Republic and the Netherlands, CEO of Segment Galley's & Equipment  
**2012 - aujourd'hui** Currently with Group Zodiac Aerospace: Chief Operating Officer (COO) of the Cabin & Structures Division, member of the Group's Executive Board



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